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ABSTRACT

This paper identifies issues in defining and reporting performance standards for the 2002 National Assessment of Adult Literacy (NAAL). The paper describes a continuum of conceptualizations of performance standards for adult literacy extending from "technical" conceptions of performance standards, as used in the psychometric literature, through "policy and programmatic" conceptions of adult literacy performance standards defined in educational goals, accountability systems, and in adult literacy program curricula, to "popular" conceptions of adult literacy performance standards as expressed in everyday speech and in the news media. The paper concludes that gaps between technical, policy and programmatic, and popular conceptions of adult literacy performance standards can be bridged by the following actions: (1) emphasizing applications of NAAL results to profile populations in need of literacy education services and avoiding misapplications of the results for adult education program accountability; (2) clarifying the differences between literacy constructs and skills measured by the NAAL and those measured by standardized tests used in accountability systems; and (3) making connections and clarifying differences between NAAL literacy definitions and performance levels and adult literacy program curricular content and content standards. (Contains 44 references.) (Author/KC)

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Working Paper Series

"How Much Literacy is Enough?" Issues in Defining and Reporting Performance Standards for the National Assessment of Adult Literacy

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"How Much Literacy is Enough?"

Issues in Defining and Reporting Performance Standards for the National Assessment of Adult Literacy

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U.S. Department of Education
Office of Educational Research and Improvement
National Center for Education Statistics

March 2000

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Abstract

This paper identifies issues in defining and reporting performance standards for the 2002 National Assessment of Adult Literacy (NAAL). The paper describes a continuum of conceptualizations of performance standards for adult literacy extending from "technical" conceptions of performance standards, as used in the psychometric literature, to "policy/programmatic" conceptions of adult literacy performance standards, as defined in educational goals, accountability systems, and in adult literacy program curricula, to "popular" conceptions of adult literacy performance standards as expressed in everyday discourse and in the news media. The paper concludes that gaps between technical, policy/programmatic, and popular conceptions of adult literacy performance standards can be bridged by (1) emphasizing applications of NAAL results to profile populations in need of literacy education services and avoiding misapplications of the results for adult education program accountability; (2) clarifying the differences between literacy constructs and skills measured by the NAAL and those measured by standardized tests (CASAS, TABE, etc.) used in accountability systems; and, (3) making connections and clarifying differences between NAAL literacy definitions and performance levels and adult literacy program curricular content and content standards.

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Introduction

This paper addresses some of the issues raised by the following topic from the Education Statistics Services Institute *Call for Papers for the Next National Assessment of Adult Literacy*:

> *Standard setting and benchmarking. Should there be performance standards established for the national assessment of adult literacy? What standard setting procedures are most appropriate for adult literacy and why?*

To clarify what is at stake in standard setting and benchmarking for the 2002 National Assessment of Adult Literacy (NAAL), the paper presents a simple typology of forms and functions for adult literacy performance standards. The term "performance standard" has been used to refer to a number of different (though related) things in discussions of educational research, policy, and practice. In its most generic sense, an adult literacy performance standard might be defined simply as an answer to the question: "how much literacy is enough." At first glance it may seem that the most practical answer to the question of whether there should be performance standards established for the NAAL is no. The desire for comparable trend data would argue for replicating the "profile" approach to large-scale literacy assessment employed in the 1992 National Adult Literacy Survey (NALS) and related surveys. The NALS profile approach was not designed to answer the question of "how much literacy is enough." Nonetheless, shortly after the release of the first NALS report, the National Education Goals Panel (NEGP) adopted the percentage of adults at or above Level 3 on the NALS prose scale as an indicator of progress toward Goal 6: Adult Literacy and Lifelong Learning, and thus created a *de facto* NALS-based performance standard for adult literacy.

This paper looks at the NALS from the perspective of a variety of conceptualizations of performance standards for adult literacy. These conceptualizations span a range of issues in defining and reporting performance standards, from technical issues related to methods of setting cut scores, to policy and programmatic implications of literacy constructs and benchmarks, to public perceptions of the need for adult literacy educational services and of the quality of the existing system of adult basic education. Since the first NALS report was released in 1993 (Kirsch et al. 1993), there have been a number of pertinent developments in educational policy and large-scale assessment methodology. On the measurement side, psychometricians have proposed more broadly inclusive methods for setting performance standards. On the

policy side, a number of initiatives have moved the field of adult literacy education toward an assessment-driven, standards-based model of system reform and accountability. These developments present both new opportunities and new challenges for the definition and reporting of performance standards for the 2002 NAAL.

The NALS used state-of-the-art measurement methods and, in many respects, pushed the envelope of large-scale literacy assessment in profiling and reporting levels of literacy proficiency among adults in the United States. At the time that the NALS was designed and conducted, the American educational measurement and educational policy communities were witnessing the emergence of two intersecting trends. The first trend was the rise of large-scale performance assessment and the second was standards-based educational reform. These two trends have continued throughout the 1990s. By the time the NALS was first reported in 1993, the public (including policymakers and many practitioners) was beginning to express frustration with changes in assessment and reporting conventions. While innovations in large-scale assessment methodology were welcomed by researchers and assessment specialists, policymakers and the general public were having difficulty understanding and accepting as legitimate the results of large-scale performance assessments. Standards-based educational reform has fared better. Throughout the 1990s, the logic of an assessment-driven and standards-based system for educational reform and accountability has steadily gained broad-based acceptance. Continuing misunderstanding and mistrust of large-scale assessment results and heightened interest in educational program accountability measures will pose significant challenges for the NAAL.

The analyses in this paper are based on a review of literature and interviews with stakeholders. In part, this paper is a follow-up and elaboration upon analyses contained in an earlier paper on issues in applying a standards-based educational reform model to the field of adult literacy (Stites, Foley, and Wagner 1995). That paper noted the fragmented nature of the discourse of educational standards as it had been applied to the field of adult literacy. In the latter half of the 1990s, that fragmentation has continued and, to a degree, has been further complicated by, steadily increasing pressures for more rigorous systems of accountability for adult basic education programs. Reports of NALS results showing a high percentage of adult Americans at the lowest levels of literacy performance contributed to heightened demands for accountability and for improved practice and outcomes from adult basic literacy education. One response to

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such demands has been additional impetus for the development of educational standards for adult literacy. Reflecting the general state of the adult basic education system, these standards-setting and accountability initiatives have themselves been somewhat fragmented and disjointed. Depending upon the approaches chosen in defining and reporting performance standards, the NAAL has the potential either to further fragment or to help create a more coherent system of adult literacy standards and accountability.

This paper takes a critical look at the NALS approach to setting and reporting performance standards from technical, policy/programmatic, and finally, from popular perspectives. Within each perspective, selected aspects of the NALS approach to performance standards are briefly described and critiqued for the purpose of suggesting modifications that might be applied to the definition and reporting of performance standards for the NAAL. One general conclusion is that some of the gaps between technical, policy/programmatic, and popular conceptualizations of adult literacy performance standards can and should be bridged. At the end of this paper, a set of recommendations is made for defining and reporting performance standards for the next NAAL in ways that might make that bridging possible.

Unpacking performance standards

Because the term "performance standards" means different things in different contexts, the various ways that the phrase "adult literacy performance standards" might be interpreted require some clarification. This paper describes a continuum of conceptualizations of adult literacy performance standards. At one end of the continuum are various "technical" conceptions of performance standards as used in the psychometric literature (and in the NALS) in discussions of methods for setting cut scores for large-scale assessments. At the opposite end of the continuum are "popular" conceptions of performance standards as expressed in everyday discourse and in the news media. The "technical" end of the continuum is marked by empirical/theoretical conceptualizations of performance standards. The "popular" end of the continuum moves toward experiential/normative conceptualizations. In between these two extremes are "policy/programmatic" conceptions of adult literacy performance standards. Policy and programmatic performance standards blend varying degrees of empirical/theoretical and experiential/normative conceptualizations and are more directly linked to literacy educational practice than technical or popular

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conceptualizations. Policy/programmatic performance standards are defined in educational goals and standards by such entities as the National Education Goals Panel (NEGP), the Secretary's Commission on Achieving Necessary Skills (SCANS), the National Skills Standards Board (NSSB), and the National Institute for Literacy's (NIFL) Equipped For the Future initiative, as well as in accountability systems, such as the Office of Vocational and Adult Education's (OVAE) National Reporting System and state plans for adult education (mandated by the Workforce Investment Act of 1998). Examining the various forms and functions for adult literacy performance standards that have been defined at various points along this continuum as well as the potential connections among them will provide the background and rationale for a set of recommendations for defining and reporting performance standards for the planned 2002 NAAL.

As noted above, the designers of the NALS did not intend for the survey to answer the question of "how much literacy is enough." The authors of the first report of the NALS took some pains to steer readers away from seeing the NALS as setting this sort of simple performance standard. The Executive Summary of the 1993 NALS report included the following passage in a section entitled "Reflecting on the Results:"

> In reflecting on the results of the National Adult Literacy Survey, many readers will undoubtedly seek an answer to a fundamental question: Are the literacy skills of America's adults adequate? That is, are the distributions of prose, document, and quantitative proficiency observed in this survey adequate to ensure individual opportunities for all adults, to increase worker productivity, or to strengthen America's competitiveness around the world?
>
> Because it is impossible to say precisely what literacy skills are essential for individuals to succeed in this or any other society, the results of the National Adult Literacy Survey provide no firm answers to such questions. (Kirsch et al. 1993, xvii)

The lack of intent to define a generic performance standard for adult literacy is further reinforced in the section of the report describing the work of the NALS Literacy Definition Committee. In a passage explaining the committee's decision to adopt the functional definition of literacy as well as the three scales that were developed as part of what is called here the 1985 Young Adult Literacy Survey (YALS) (Kirsch and Jungeblut 1986) and the 1989-90 U.S. Department of Labor survey of the literacy skills of job seekers (Kirsch and Jungeblut 1992), the 1993 report contrasts the NALS approach with "traditional approaches to literacy assessment" that distinguish "literates" from "illiterates."

> The literacy scales provide a useful way to organize a broad array of tasks and to report the assessment results. They represent a substantial improvement over traditional approaches to literacy assessment, which have tended to report on performance in terms of single tasks or to combine the results from diverse tasks into a single, conglomerate score. Such a score fosters the simplistic notion that "literates" and "illiterates" can be neatly distinguished from one another based on a single cut point on a single scale. The literacy scales, on the other hand, make it possible to profile the various types and levels of literacy among different subgroups in our society. In so doing, they help us to understand the diverse information-processing skills associated with the broad range of printed and written materials that adults read and their many purposes for reading them.
>
> In adopting the three scales for use in this survey, the committee's aim was not to establish a single national standard for literacy. Rather, it was to provide an interpretive scheme that would enable levels of prose, document, and quantitative performance to be identified and allow descriptions of the knowledge and skills associated with each level to be developed. (Kirsch et al. 1993, 4)

The brief passage quoted above contains a wealth of information about the NALS approach to large-scale literacy assessment. As the passage makes clear, the NALS design incorporated a conception of literacy proficiency as a complex performance rather than as a unidimensional skill. The NALS "profile" approach to literacy assessment described succinctly in the above passage also incorporated innovative Item Response Theory (IRT) methods for scaling tasks (test items) and individual responses to tasks for level of difficulty. Although, as stated in the passage, the intent of the NALS was not to set a "single national standard for literacy," the passage may be interpreted as indicating several ways in which the ETS researchers who designed and conducted the NALS (and its predecessors, the YALS and the U.S. Department of Labor studies) approached the question of defining and reporting performance standards. Expressed in terms of the continuum of performance standards conceptualizations discussed above, these approaches may be stated as follows:

(1) The constructs of literacy proficiency and IRT methods used in the NALS to design tasks and to establish (multiple) cut scores for performance levels constituted performance standard setting in the technical sense.

(2) The adoption of a definition of literacy and design of tasks to reflect a theoretical construct of literacy proficiency as well as purposes for literacy constituted performance standard setting in the policy and programmatic senses.

(3) The reporting of distributions of types and levels of literacy among the adult population represented performance standard setting in the popular sense.

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The first of the three assertions above is likely to be uncontroversial. Because they were unintended and unforeseen in the design of the NALS, the second and the third assertions are more debatable. The unintended impact of the NALS on adult literacy performance standards in the policy and programmatic senses had much to do with the public policy climate (i.e., the push for educational standards and for standards-based accountability) at the time that NALS results were released. The unforeseen impact of the NALS on adult literacy performance standards in the popular sense was largely the result of widespread misinterpretation of the NALS scales and performance levels. The section below explores some issues that arise from the NALS approach to performance standards setting from a technical perspective with an eye to the possibilities for technical modifications of that approach for the NAAL. This is followed by a discussion of the NALS approach to performance standard setting and reporting from policy and programmatic perspectives again with an eye to planning for the NAAL. Finally, the impact of the NALS and the potential for the NAAL to shape popular perceptions of adult literacy performance standards are considered.

Technical perspectives

Within educational measurement circles, the term "performance standards" is most often used to refer to the cut scores used to mark levels of performance on a scale of skills and knowledge. Although there is no consensus on a method for setting performance standards in the psychometric literature, the traditional psychometric perspective generally views standards as "cut scores" (the numeric outcomes of a standard setting process), benchmarks on a scale, threshold values between contiguous categories, or numeric values that operationalize "'how good is good enough' (Livingston 1995, 39)" (Crocker and Zieky 1995, ES2). In the technical sense, the statement in the introduction (above) that the NALS was not intended to set a performance standard for adult literacy is false, though it remains true in the popular and policy/programmatic senses (see sections below). However, given the fact that the NALS levels were later interpreted as performance standards it would not be wrong to conclude that the NALS process for establishing cut scores for these levels constituted a technical approach to setting performance standards.

Even from the technical perspective, setting performance standards always involves a degree of subjectivity and arbitrary judgment. There seems to be a fair degree of unanimity among psychometricians on the point that the answer to the question "how good is good enough" can only be answered by someone's judgement. In an article published 1996, Ronald Berk counts "nearly 50 standards-setting methods documented in the literature" and goes on to point out:

> At the epicenter of every method proposed since prehistoric times is human judgment, whose subjectivity and imprecision wreak havoc in the minds of quantitatively trained people. (Berk 1996, 215)

There also seems to be widespread agreement on the point that different methods for setting performance standards result in different standards (see Crocker and Zieky 1995; Jaeger et al. 1996). This is not the place, nor is it within this author's competence to evaluate the IRT methods used in the NALS or to critique the general compatibility of IRT methods with stakeholder participation in standard setting. However, based on the evidence at hand, a case can be made that a process for expanding stakeholder participation in setting cut scores for the NAAL is both possible and desirable. The Item Response Theory (IRT) methods used for setting and validating cut scores for the NALS place greater weight on theoretical constructs and empirical analyses than on stakeholder judgments. Thus it is not surprising that participants in the stakeholder focus groups conducted by NCES in 1998 raised several concerns related to the setting of cut scores for the NALS. Among the most prominent of these concerns were that the range of literacy skills encompassed by Level 1 was too broad, that the RP80 (80 percent response probability) standard was too high, and that the NALS scales and levels were too difficult to understand and interpret (Sherman et al. 1998). While it may not be possible or desirable to change either the range of skills in Level 1 or the RP80 standard, it may be possible to adopt procedures for including stakeholders in technical performance standard setting processes for the NAAL in ways that would increase the "transparency" of the NALS scales and levels.

Peter Mosenthal (1997) argues that the NALS approach for setting cutoff scores for performance levels was "a judgmental activity that was informed by an extensive empirical process" (297) and, citing Gary Phillips (1994), characterizes "this continual interaction between informed judgment and useful empirical data" as providing a basis to set "reasonable" standards. The following passage from the 1994 article by Phillips gives a sense of what is meant by a "reasonable" standard setting process in this instance.

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> (Some) education performance standards require significantly more empirical data before a standard can be reasonably set. This is the case when educators attempt to establish acceptable levels of literacy for the adult population, or determining the level of proficiency needed in reading, writing and mathematics in order to be promoted from one grade level to another. ... These types of performance standards cannot be set solely on the basis of a political process. Although the standards are ultimately judgmental, they involve more than human intuition only. They require a consensus on what is meant by notions such as 'literacy,' 'proficiency,' and 'success.' Once these hypothetical constructs are defined, reliable, valid, and fair measures of them must be developed. ... The continual interaction between informed judgement and useful empirical data is all part of the art and science of setting performance standards in education. (Phillips 1994, 192)

As this passage makes clear, consensus on key constructs (literacy and proficiency in the case of the NALS) is the essential underpinning for reliable, valid, and fair measurement. Note that the form of consensus implied here is not a broad-based participatory process. Rather, the consensus building process implied is closer to the scientific method of hypothesis formation and testing. The literacy constructs underlying the NALS prose, document, and quantitative scales emerged from previous studies by ETS researchers, as noted in the first report.

> Previous research conducted at ETS has shown that the difficulty of a literacy task, and therefore its placement on a particular literacy scale, is determined by three factors: the structure or linguistic format of the material, the content and/or context from which it is selected, and the nature of the task, or what the individual is asked to do with the material (Kirsch et al. 1993, 69–70).

As pointed out in the NAAL stakeholder focus groups (Sherman et al. 1998, 5), the complexity of the resulting NALS scales and levels created difficulties in communicating the results to the public.

The call for performance standards for adult literacy that are more "transparent" (easily understood) is likely to increase in the coming years. This will present an important challenge for the NAAL. As the trend toward more performance-based assessment continues, educators and assessment specialists are likely to join in the call for assessment designs that clearly communicate learning goals and processes (see policy/programmatic section below).

Many psychometricians have recently considered the challenges to standards-setting procedures posed by complex, performance-based assessment methods. In general, the response has been to call for new methods for including expert and stakeholder judgments of performance while preserving valid and reliable standards-setting processes. Berk (1996) identifies two changes in testing practices that have necessitated the development of new approaches to performance standards-setting: polytomous item

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formats and multiple cut scores. Polytomous (as opposed to dichotomous) item formats have become common as large-scale assessments have incorporated constructed-response items (essays, oral discourse, portfolios and other formats that are scored using a rubric with a range of zero to two or greater). Likewise, use of multiple cut scores in large-scale assessments has been popularized by the National Assessment of Educational Progress (NAEP) as well as the NALS. In Berk's view, the combination of these two changes in testing practices suggest a need for new judgmental standards-setting processes. He describes 10 procedures for a General Eclectic Method (GEM) that he feels summarize the best of past practice as well as promising new techniques. Jaeger and colleagues (Jaeger et al. 1996) also see a need for new and more inclusive standard setting processes. They describe current methodology for setting performance standards on performance assessments as "embryonic" (80). While conceding that setting performance standards is "a judgmental process" and "subjective by definition" they argue for a performance standards-setting that is "arbitrary" (in a footnote they point to an Oxford English Dictionary definition of arbitrary as "relating to, or dependent on the discretion of the arbiter, arbitrator, or other legally-recognized authority; discretionary, not fixed") but not "capricious" (also defined in a footnote as "Full of, subject to, or characterized by caprice; guided by whim or fancy rather than by judgment or settled purpose; whimsical, humoursome") (81). Jaeger et al. (81) go on to list four conclusions that are derived from research on performance-standard setting for selected-response tests (but may be generalizable to performance assessments):

(1) Performance standards rarely occur naturally and therefore the boundary between a passing performance and one that is not is a matter of judgement. This is the reason that some have labeled all standards-setting as capricious (cites Glass 1978).

(2) Performance standards are method-dependent in that decisions made based on specifications of levels of performance depend to a large degree on the method used to elicit judgments on standards.

(3) Those who set performance standards cannot be assumed to be trustworthy judges of the quality of the methods they have used.

(4) Widely used performance standard setting methods presume the existence of an underlying interval scale of performance on the test or assessment for which the standards are set.

Both Berk (1996) and Jaeger et al. (1996) recommend including a broad representation of stakeholders on standards-setting panels. Both articles also strongly recommend strategies for anchoring standards in concrete reality through use of normative data or through explicit behavioral descriptions for each level.

The technical approach to setting performance standards employed by the NALS was responsive to stakeholder input to a degree. However, while input from adult literacy content experts and practitioners was sought in selecting the general definition of literacy and scales adopted by the NALS, it is not clear that stakeholder input had any significant impact on task specifications or cut scores used to place tasks and task performances within the five levels of the prose, document, and quantitative literacy scales. The NALS' use of IRT methods in setting and validating cut scores places it very near the empirical/theoretical extreme of the performance standard continuum. While this has definite advantages in terms of providing comparable, high quality data for research, it may pose a threat to the validity (especially consequential validity, see Messick 1994) of the NAAL. To avoid such threats, the NAAL might enable more stakeholder participation in the determination of cut scores by adopting some of the steps recommended by Berk or by Jaeger and his colleagues. Such stakeholder involvement will be far more critical to the validity of the NAAL than it was for the NALS. The stakes for the 2002 NAAL will be higher as a result of changes in the policy environment that are moving the field of adult literacy toward a standards-based system of accountability. These changes and their implications for the NAAL are discussed in the section below.

Policy/programmatic perspectives

The need to seek new ways of broadening participation in adult literacy performance standard setting becomes even more evident as we move from technical considerations of methods for defining cut scores to the policy and programmatic implications of adult literacy performance measures. Within education policy circles, the term "performance standard" is most often used in conjunction with the term content standards and in the context of discussions of standards-based educational reform, i.e., the use of content and performance standards for purposes of accountability and monitoring the quality of educational systems. While content standards define the range of desirable knowledge and skills, performance standards answer the question of how much knowledge/skill is enough. In the 1990s, performance

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standards (in the policy/programmatic sense) have become the driving force behind emerging accountability systems designed to improve educational outcomes.

A previous paper on issues in standard setting for adult literacy (Stites, Foley, and Wagner 1995) reviewed the language and logic of educational standards in the context of policy formulation for standards-based educational reform. The authors adopted definitions of various forms and functions of educational standards put forward by Husen and Tuijnman (1994) in their international review of systems for monitoring educational performance. Husen and Tuijnman (1994, 3) differentiate educational goals and standards and characterize goals as "usually couched in very general terms and ... not directly amenable to measurement." A standard, on the other hand, "refers to a degree of excellence required for particular purposes, a measure of what is adequate, a socially and practically desired level of performance" (2). More specifically, educational standards are usually described in terms of a "desired level of content mastery and performance" (2).

American educational policy discussions have revolved around definitions of content, performance, and to a lesser degree, opportunity-to-learn (OTL) standards. Content standards define "everything a student should know and be able to do" (National Center on Educational Standards and Testing (NCEST) 1992, 9). In other words, content standards describe the range of desirable knowledge and skills within a subject area. Performance standards specify "how much" students should know and be able to do. Thus, while content standards are primarily of use in framing a curriculum, performance standards establish benchmarks to shape expectations and to provide a basis for measuring learning outcomes and for imposing rewards and sanctions. Opportunity-to-learn (OTL) standards were proposed as a response to concerns over the potential inequity of raising expectations for all students without ensuring that all have an equal opportunity to meet higher expectations (NCEST 1992).

In an ideal model of standards-based educational reform, these three types of educational standards are interconnected. The nature of the links between content, performance, and OTL standards was described in a report from the National Academy of Education (1993) as follows:

> ... for meaningful and fair performance standards to be set, it is necessary to define the exact content areas to which these standards shall apply. Before performance can be fairly assessed, it is moreover necessary to determine whether all students have had adequate opportunities to learn the prescribed content (quoted in Husen and Tuijman 1994, 2)

The NALS approach to assessing literacy performance was not designed to operate within this model of standards-based educational reform. The decision not to connect the NALS to a standards-based reform model may have been justified by the fact that, at the time, there was no clear curricular reference point for a definition of content for adult literacy education. However, this lack of connection was more directly related to the fact that the design of the NALS was guided by a different model for policy research, one that had been developed for the earlier YALS (Kirsch and Jungeblut 1986) and the U.S. Department of Labor study of the literacy proficiencies of job seekers (Kirsch and Jungeblut 1992). The criteria for effective policy research guiding the design of the NALS are laid out in the following passage by Samuel Messick (1987):

> If large-scale educational assessments are to function effectively as policy research—that is, to provide empirically-grounded interpretations or understandings to inform policy judgements—a number of key features must be exhibited. Central among these are first, the capacity to provide data or measures that are commensurable across time periods and population groups, so that trends and group differences can be meaningfully examined; second, the capacity to provide correlational evidence to sustain construct interpretations; and third, provision for measuring diverse background and program factors to illuminate context effects and treatment or process difference (158—quoted in Kirsch and Jungeblut 1992, 5).

In this passage, Messick identifies several key criteria for effective policy research that guided the development of the NALS profile approach. Mosenthal (1997) summarizes these criteria as comparability, relevance, and interpretability and considers them to be the keys to optimizing links among research, policy, and practice. Mosenthal argues that the NALS represents an "agenda-analytic" approach that embodies these three criteria.

> The purpose of NALS was not to solve the 'adult literacy problem,' but rather to provide a framework for informing the national adult literacy agenda so that, within the broader context of the survey's agenda, problems and goals could be identified and addressed as different groups of adult literacy researchers, policymakers, and practitioners saw fit. (292).

The push for the development of national goals and standards for American education has created a difficult climate for the "agenda-analytic" approach to function as intended. In Mosenthal's vision, the NALS construct-driven "profile" approach would supply the substance for the definition of an adult literacy policy agenda. In actuality, political processes of standards development have overtaken the empirical/theoretical standards-setting process of the NALS with the result that the NALS literacy construct

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scales and levels have become just one among a number of competing, policy-sanctioned models for adult literacy content/performance standards.

The rush to identify educational content and performance standards emerged out of concerns over the quality of the American workforce and perceptions of mediocre educational achievement by American schoolchildren in the mid-1980s. The standards-based education reform movement rapidly picked up speed and power in the late 1980s, culminating in the 1989 formulation of the America 2000 educational reform agenda proposed by the nation's Governors and President Bush. America 2000 defined six National Education Goals, including Goal 5: Adult Literacy and Lifelong Learning:

> By the year 2000, every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship.

The goals and objectives of the America 2000 proposal were adopted by the U.S. Department of Education in 1992 and were subsequently included in a legislative initiative entitled the "Goals 2000: Educate America Act." By the time that the Goals 2000 legislation was submitted to Congress in 1993, the number of goals had been expanded from six to eight and the objectives were elaborated to include a set of sixteen core indicators.

The 1994 National Goals Report prepared by the NEGP explains that the sixteen core indicators were designed to be "comprehensive across the Goals; most critical in determining whether the Goals are actually achieved; policy-actionable; and updated at frequent intervals, so that the Panel can provide regular progress reports" (NEGP 1994, 15). Furthermore, these core indicators were meant to provide general criteria for policymakers, educators, and the public to employ in measuring progress in raising the level of the nation's "educational health"; to give policymakers and the public a better idea of what they can do to improve educational performance; to clearly communicate "benchmarks" for expected levels of performance; and to identify and remove gaps in national and state level data that might get in the way of the Goal Panel's task of measuring progress toward the National Goals (14–15). Among the three indicators that were specified for Goal 6 (originally Goal 5): Adult Literacy and Lifelong Learning in the 1994 Goals Report, the first is of particular interest here.

> Indicator 10—Adult literacy:
> Increase the percentage of adults aged 16 and over who score at or above Level 3 in prose literacy on the National Adult Literacy Survey (NALS) (NEGP 1994, 41).

The NEGP's choice of a level of performance on one of the three scales developed for the NALS as a core indicator of educational progress thus forced the NALS "agenda-analytic" intent into the procrustean bed of a standards-based model of educational reform and accountability. Designed as an agenda setting profile of the distribution of adult literacy proficiencies, the NALS became instead a barometer of the nation's "literacy health" and a "benchmark" of expected literacy performance. The NALS literacy scales and levels filled an apparent gap left by the absence of any complete and coherent system of content and performance standards for adult literacy. It remains to be seen whether such a system will be in place by the time the NAAL is conducted in 2002. Currently, a number of policy initiatives (some begun before the release of the NALS report and some after) are moving in the direction of national content and/or performance standards for adult literacy.

Since the mid-1980s there has been a proliferation of educational standards-setting activity in the U.S. at both the national and the state levels. At the national level, the leader and pacesetter in these efforts has been the National Council of Teachers of Mathematics (NCTM). One of the central lessons of NCTM's decade-long experience (see Ball 1992) and of the experiences of other K–12 subject area standards-setting efforts in attempting to follow their lead has been that moving from the theory of standards and standards policy to the actual process of setting standards has required customization of the forms and functions of standards to suit the particular needs and characteristics of each subject area. Not surprisingly, given the different institutional contexts for K–12 subject area standards and adult literacy standards, the setting of standards for adult literacy seems to be pursuing its own unique path. In view of the fragmentary, "patchwork" quality of the adult basic education system (see Office of Technology Assessment 1993; Young et al. 1994), it is not surprising that standard setting for adult literacy has also been a fragmented and disparate enterprise. Current (and in some ways competing) models for national content/performance standards for adult literacy include but are not limited to the foundation skills defined by the U.S. Department of Labor for the SCANS and the occupational skills standards developed under the auspices of the NSSB, the NIFL's Equipped for the Future framework for competent adult performance, the learning gains measures recommended by OVAE's National Reporting System, as well as the learning measures specified in state plans for adult education drafted in response to mandates in Title II of the 1998 Workforce Investment Act. Though none of these initiatives has been focused solely on defining desirable

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types and levels of literacy (and numeracy) skills, each has addressed literacy performance standards within a broader framework of skills and competencies.

Within the realm of adult literacy standards (as in other content areas), the boundary between definitions of content and performance standards has tended to blur. Determinations of what one needs to know and be able to do to at various levels of literacy (and numeracy) proficiency lead naturally to considerations of how much one needs to know and be able to do to achieve a specified level of literacy proficiency and vice versa. However, early efforts at standards-setting for adult literacy tended to focus first on content standard definition. SCANS, the work of the NSSB, and NIFL's Equipped for the Future initiative fall into this category. More recently, the press for learning gains measures and standards for program reporting and accountability has accelerated the development of performance standards work. OVAE's National Reporting System and state plans for adult education written in response to Title II of the 1998 Workforce Investment Act fall into the latter category.

When it was formed in 1990, the SCANS was asked to "examine the demands of the workplace and whether [America's] young people are capable of meeting those demands" (SCANS 1991, xv). This general mission was broken down into four tasks:

-to define skills needed for employment;

-to propose acceptable levels of proficiency in these skills;

-to suggest effective ways of assessing levels of proficiency; and finally,

-to develop a means of disseminating the results of their work to schools, businesses, and homes.

The task of identifying and defining skills was carried out in a five-stage process that entailed: consultations with policymakers, business leaders, and a review of relevant research; the convening of expert panels; reviews of psychological, educational, and business databases; further consultations with research and business experts; and finally, analyses of skill demands of jobs in various areas of the economy (Whetzel 1993). The result was a model of "workplace know-how" that specified desirable competencies in five domains and foundation skills in three domains. Among the SCANS foundation skills are the following:

> Basic skills—reading, writing, arithmetic and mathematics, speaking, and listening (SCANS 1991, vii).

The generic standard for workplace literacy put forward by SCANS has been elaborated in various ways (O'Neil, Allred, and Baker 1992; Wills 1998), particularly in response to Title V, The National Skill Standards Act of the 1994 Goals 2000: Educate America Act. The Skill Standards Act established a National Skill Standards Board (NSSB) with the goal of ensuring "a high skills, high quality, high performance workforce, including the most skilled front-line workforce in the world." To help accomplish this goal the NSSB initiated a "voluntary national system of skill standards and of assessment and certification of skill standards." Informed by the U.S. Department of Education's OVAE study of Occupational Skill Standards projects, the NSSB was charged with identifying occupational clusters as well as the skills and personal qualities needed to succeed in each cluster. The Skill Standards Act also enabled the NSSB to award grants to industry councils or other voluntary partnerships that want to develop skill standards and encouraged the development of a variety of voluntary certification and assessment systems for the skills (see Wills 1998).

The NIFL began its "consumer-driven" adult literacy content standards initiative in response to the 1993 Congressional mandate to measure progress toward National Education Goal 6. The first phase of the initiative consisted of a survey of learners to determine what they needed to know and be able to do to achieve Goal 6. A content analysis of responses from 1500 respondents yielded four fundamental purposes for learning: access to information; "voice" or being able to express ideas and opinions with confidence; being able to solve problems independently; and building a bridge to the future (learning how to learn) (Stein 1995). The results of this survey provided the basis for the Equipped for the Future (EFF) framework. NIFL furthered the development of the EFF framework by awarding three planning grants in 1996-97 for the development of "role maps" for adult performance in the roles of worker, citizen/community member, and parent/family member. The "areas of responsibility" and "key activities" developed within each of these role map development efforts were subsequently combined into a set of "common activities used to carry out EFF adult roles." Over the next two to three years, NIFL hopes to make the Equipped for the Future standards "more explicit and measurable" and to develop a "performance continuum with levels and standards" so that "the standards will be used for accountability purposes." (S. Stein—personal communication, May 27, 1999).

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While the EFF standards initiative is moving gradually from content to performance standards for adult literacy, other initiatives are attempting to fill the immediate need for a more coherent and uniform set of performance standards for program accountability.

The U.S. Department of Education's OVAE initiated the National Outcome Reporting System Project (NRS) in response to a resolution passed at a 1996 meeting of state directors of adult education in Columbia, Maryland:

> We recommend a collaboratively funded and managed project to analyze and synthesize accountability systems that have been developed nationally and in separate states that incorporate adult education outputs and outcomes. The project will continue the next steps of work begun here by state directors to draft protocols, determine how data would be collected and how reliability could be optimized. The project will involve state directors of adult education and other stakeholders in setting project policy and in project operations (quoted in Condelli and Kutner 1997, 1).

Among the seven categories of outcome measures developed by state directors at the 1996 meeting was the following:

> Learning gains—measures that demonstrate that the participant acquired reading, writing, functional or employment-related skills, numeracy, or English-speaking and listening skills (2).

In their 1997 report on the development of the NRS, Condelli and Kutner (1997) make the following comments on the issue of defining performance standards:

> Adult education stakeholders are still clarifying the policy goals, measures and methods for the outcome reporting system and, therefore, may not want to set explicit performance standards at this time. However, the issue cannot be ignored because, at some time, key audiences will demand a performance standard, or impose their own on the program (i.e., they will judge the program according to their own criteria) (60).

A 1998 report on definitions of measures for the NRS (Condelli 1998) notes that two factors guided the development of the NRS definitions: the need to accommodate the diversity of the adult education delivery system and the need for compatibility of the definitions with related adult education and training programs. The section of the report on learning gains notes that stakeholders have indicated that "the adult education program is primarily an *educational program designed to teach literacy skills* [emphasis in the original]" (Condelli 1998, 8). The report includes "entry level descriptors of student functioning in content areas" (basic reading and writing; numeracy skills; and, functional and workplace skills) as well as "test benchmarks" equating six "literacy levels" for adult basic education to Test of Adult Basic Education (TABE) scale scores in reading and math and Comprehensive Adult Student Assessment

System (CASAS) scores, and four "literacy levels" for English as a second language corresponding to scores on the CASAS and Student Performance Levels (SPL) speaking and reading levels.

The most recent source of increased pressure for the development of performance standards for adult literacy program accountability came with the 1998 passage of the federal Workforce Investment Act (WIA). Title II of the WIA, the Adult Education and Family Literacy Act, replaces the former Adult Education Act. The WIA places greater emphasis on documentation of learning gains than on numbers of learners participating in an adult education program. It does so by tying receipt of federal funding by states to the development and implementation of five-year plans for improving instructional and professional development outcomes. At least 33 states have drafted state plans for adult education in response to mandates for such plans in the WIA. Several states have made draft versions of their plans available on the Internet, including California, Illinois, Iowa, Tennessee, and Washington. The California State Plan uses NALS levels from California's State Adult Literacy Survey (SALS) data as markers for establishing needs for adult basic education and for setting priorities for populations to be served. However, learner outcomes in the California State Plan are specified in terms of CASAS and TABE scores. Moving in parallel and in some ways ahead of national trends, some states, notably Iowa, Pennsylvania, Kentucky, and Massachusetts, have made headway in creating coherent systems for reporting adult basic education outcomes at the state level. For performance measures, states have tended to take the pragmatic route of relying on commonly used standardized tests (e.g., CASAS and TABE) as recommended by the OVAE's National Reporting System.

To better grasp the ways that the various content and performance standards initiatives described above are or are not filling the need for policy/programmatic adult literacy performance standards and to understand the role that these developments suggest for the NAAL vis-à-vis emerging accountability frameworks, it will be useful to look more closely at the range of functions for performance standards within accountability systems. Also, given the pace and volume (if not coherence) of adult literacy content and performance standards setting, the field of adult literacy may be moving into a status roughly parallel to K–12 subject areas where national standards are layered over diverse local curricula and performance measures. In such a case, the lessons of the NAEP may become relatively more relevant to the design of the NAAL.

Eva Baker (1996) adopted an international comparative perspective to analyze the functions of performance standards in an educational accountability system. She found that in the context of U.S. educational reform, performance standards have been defined as means of strengthening "systems processes of control, coherence, guidance, and participation, as well as to set clearer boundaries for the measurement quality of educational attainments" (6). The five functional dimensions of performance standards identified by Baker (1996) provide a useful organizing framework for considering the potential roles of adult literacy performance standards.

- *Control*—performance standards are useful to the extent that they "transfer attention away from specification of educational process" and yet the manner in which performance standards are phrased may communicate preferences for particular educational methods (Baker 1996, 10).

NALS performance standard setting processes and reporting seem to have had only a very indirect effect on shifting the focus of the adult basic education system away from educational process concerns and toward a focus on educational attainments. Control functions for the next NAAL performance standards are likely to operate through the correspondence (or influence) of the NAAL multidimensional construct of literacy proficiencies on definitions of content standards (EFF, NSSB skills standards) and accountability mechanisms (NRS and state plans). In the latter case, the linking of NAAL and CASAS performance levels (and performance level descriptors) may be attempted as a means of connecting NAAL-based demographic profiles to CASAS-based program outcomes. Such linking is not advisable. Feuer and colleagues (1997, see also Mislevy 1992) have pointed out multiple factors (including content, format, margins of error, intended and actual uses, and consequences of the tests) that affect the validity of inferences drawn from linked scores.

- *Coherence*—performance standards may be a source of coherence (the "extent to which students in an educational system share in common experiences that would provide policymakers and teachers with a clear understanding of the order and nature of their learning") in the U.S. decentralized educational system where other potential influences on coherence (curriculum, materials, teacher training) are indirect and weak (Baker 1996, 11).

The perceived mismatch between the construct of literacy skills guiding the NALS and the learning objectives of most adult basic education curricula raises questions about the potential contribution of the NAAL to coherence in the adult education system. One of the perceived strengths of performance standards and the alternative forms of assessment that they support is the potential that they hold to clearly

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communicate expectations for student achievement and at the same time to more closely link classroom instruction and assessment to accountability measures (see Herman, Aschbacher, and Winters 1992). As a profile of the distribution of literacy proficiencies in the adult population, the NALS had virtually no influence on the coherence of the adult basic educational system. In some ways, the influence of the NALS and the potential influence of the NAAL on coherence in the adult literacy field is mitigated by the fact that the field has long been oriented toward the functional literacy perspective that guided the design of the NALS and related literacy assessments. The orientation toward a functional literacy perspective was largely the result of the field's earlier exposure to the Adult Performance Levels work in the 1970s (James Parker—interview, April 7, 1999). Even so, the potential impact of the NAAL on adult literacy curricular and assessment practices would be increased if NAAL task content were better aligned with adult literacy curricula and learning goals. One way to achieve such alignment may be to incorporate the purposes, roles, and common activities of the EFF framework in the design of new tasks for the NAAL. This would allow for some alignment of the NAAL to emerging adult literacy content standards, curriculum, materials, and teacher training.

- *Guidance*—if they are sufficiently detailed, performance standards may provide guidance ("forms and types of information provided that are needed to generate willing compliance by participants") to an educational system by 1) clarifying "the order and nature of expectations for different-aged learners or for same-aged students at different attainment levels," and 2) providing cues ("essential quality criteria") for the organization of instruction (Baker 1996, 12–13).

It is clear that the NALS did not provide the forms of guidance detailed above, nor was it designed to do so. The lack of alignment of the NALS with adult literacy curricula and learning goals was the chief limiting factor. As noted above, such alignment could be enhanced for the NAAL and NAAL performance standards (in the form of performance level descriptors) may provide guidance to educators and adult learners if they are sufficiently detailed and disseminated in appropriate ways. The Internet and multimedia formats could be used to disseminate descriptions of the NAAL tasks, scales, and level descriptors. However, simply popularizing the details of the NAAL literacy constructs and scales may not suffice to convince adult educators that these are appropriate or important guides for literacy learning and instruction. Broad-based consensus on detailed definitions of literacy has proven hard to achieve (see Venezky, Wagner, and Ciliberti 1990 and the popular perspectives section below).

- *Participation*—patterns and degrees of constituency participation in setting performance standards are influenced by 1) "traditions of responsibility and authority, general satisfaction with the system's effectiveness and scope, and the diversity of the publics served by educational programs," and 2) "the technical character of the approach taken" (Baker, 1996 14).

As noted in the technical perspectives section above, the question of who participates in the setting of performance standards for the next NAAL must be carefully weighed and a more broad-based participatory process may be possible without seriously threatening the reliability and validity of the process.

- *Measurement quality*—Baker describes three dimensions of the development and use of educational outcome measures: credibility, quality, and adaptability. Credibility issues have arisen because of the tight timetable for educational change. Performance standards suggest more performance-based assessment but "skepticism about the difficulty, fairness, and trustworthiness of new examinations" has undermined some educational reform agendas. High-quality measures create credibility. Again time is a factor, but will sufficient time and resources be available "to develop the appropriate scientific base for new assessments before skepticism, overpromising, and retreats to earlier measurements approaches take over?" Finally, adaptability is "the system's capacity to expand, contract, or change direction over time" yet, in the U.S., system change "is less a feature of macroplanning than the happenstance confluence of resources, politics, and innovative ideas" (Baker, 1996, 15–17).

Baker's concerns about the impatience of accountability systems seem to be very much on target in the case of developing and selecting appropriate measures for adult literacy learning outcomes (see above). The credibility, quality, and adaptability of the NAAL measures will be tested severely by the policy environment and expectations that are likely to await the release of the 2002 results. If the NAAL takes up the challenge of performance standards-based reporting linked to adult literacy education goals and content, it may encounter problems similar to those faced by the NAEP in reporting "achievement levels." The first use of performance standards-based reporting for the NAEP results were the "achievement levels" developed by the National Assessment Governing Board (NAGB) for the 1990 mathematics assessment. NAGB interpreted its establishing legislation as giving it a mandate to set performance standards for NAEP. Baker and Linn (1997, 20) summarize the results of three separate evaluations of the NAGB's initial effort to set achievement levels for the 1990 mathematics assessment (Linn, Baker, and Dunbar 1991; Stufflebeam, Jaegar, and Scriven 1991; U.S. General Accounting Office 1993). These evaluations included the following criticisms:

- The achievement level descriptions and associated exemplar items did not adequately coincide with actual performance of students scoring at a given achievement level;

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- There was a lack of evidence to support the validity interpretations invited by the achievement level descriptions;
- The NAEP item pool was not adequate to measure advanced levels;
- The judgement process was too demanding for raters; and
- The standards were overly dependent on the particular sample of judges.

Although the NAGB responded to these early criticisms, Baker and Linn (1997, 21) point out that both the 1992 mathematics and reading achievement levels were judged to be unacceptable in two other evaluations (National Academy of Education 1993; U.S. General Accounting Office 1993).

Impatience was evident in the National Education Goals Panel's (1994) use of the NALS ("increase the percentage of adults age 16 and older who score at or above Level 3 in prose literacy on the National Adult Literacy Survey" (41)) as an indicator for the adult literacy component of Goal 6. This choice sent the message (whether intended or not) that Level 3 on the NALS prose literacy scale was the benchmark (threshold level) for functional literacy. The impression of Level 3 as a benchmark for functional literacy is reinforced by the following explanation of this choice in the 1994 report:

> Although adults who score below Level 3 do have some limited literacy skills, they are not likely to be able to perform the range of complex literacy tasks that the National Education Goals Panel considers important for competing successfully in a global economy and exercising fully the rights and responsibilities of citizenship.

While Level 3 on the prose scale may well represent an important minimal threshold of proficiency in some respects—the GED-NALS comparison study (Baldwin et al.1995), for example, provides some justification for the choice in showing the correspondence of Level 3 performance on the NALS scales to passing performance on the GED Tests—the choice of a single scale and the implied dichotomization of adults into functionally literate (at or above Level 3) and functionally illiterate (Levels 1 or 2) is unfortunate and misleading. As discussed in the section on popular perspectives below, leading the public away from such dichotomous thinking about functional literacy and illiteracy will pose significant challenges for the NAAL.

Popular perspectives

The general public and the news media seem to have fairly fuzzy understandings of performance standards. In the case of adult literacy performance standards, the "folk" concept seems to be linked to notions of being able to perform everyday reading and writing tasks, especially those encountered in the workplace. The NALS literacy definition and scales seem to have been widely misunderstood by lay audiences. One bit of evidence on the depth of popular misunderstanding of the NALS can be found in *Education Week's* September 15, 1993 story on the release of the NALS report. Under the headline "Half of adults lack skills, literacy study finds," the first sentence of the story is as follows:

> Nearly half of all adult Americans cannot read, write, and calculate well enough to function fully in today's society, and people in their early 20's have poorer literacy skills than did those in a 1985 survey, according to a federal study.

This summary statement of the NALS findings contains several rather serious and probably common misconceptions. First, the statement that half of all adult American lack adequate writing skills is an apparent misunderstanding of the nature of the NALS document literacy measures. Second, the association of performance at NALS Levels 1 and 2 with functional illiteracy is never made in the NALS report. In fact, this association is directly contradicted by a bulleted point in the report's Executive Summary (Kirsch, et al. 1993) that reads (in part):

> The approximately 90 million adults who performed in Levels 1 and 2 did not necessarily perceive themselves as being 'at risk.' ... It is therefore possible that their skills, while limited, allow them to meet some or most of their personal and occupational literacy needs (xv).

Third, the NALS report attributes its finding of relatively lower performance by adults in their 20s to changing demographics and particularly to "the dramatic increase in the percentages of young Hispanic adults, many of whom were born in other countries and are learning English as a second language" (xvi). It is certainly not fair to judge the quality of public (mis)understanding of the NALS report by one newspaper article. As a matter of fact, the author of the *Education Week* article goes on to provide a short but accurate description of the NALS items and methods of scaling items for levels of difficulty and also notes the impact of immigration on the relative performance of the young adults in the 1985 and 1992 surveys. In other words, this reporter seems to have read the NALS report carefully and her summary of its findings is

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relatively nuanced and accurate. Nonetheless, a reader of the *Education Week* report on the NALS would not be wrong in drawing the conclusion that adults who performed below Level 3 on the NALS prose, document, and quantitative literacy scales did not meet the standard for functional literacy.

There seems to be little doubt that the results of the NAAL may be similarly misinterpreted by many policymakers, by the general public, as well as by many within the adult literacy educational system. The question is how to present the results of the NAAL in a way that avoids inappropriate uses of the results in evaluating adult literacy performance and, even more importantly, avoiding inappropriate applications of the NAAL results to adult educational program accountability. As noted in the above policy/programmatic section above, one positive step might be to link the NAAL results to a more specific and detailed definition of literacy than that adopted by the NALS.

The NALS was guided by a definition of literacy originally developed by a national panel of experts for the YALS assessment (Kirsch and Jungeblut 1986) as follows: "Using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential" (Kirsch et al. 1993, 2). According to Campbell, Kirsch, and Kolstad (1992, 9–10), the expert panel convened by ETS to define literacy for the NALS started with this YALS assessment definition and after much discussion concluded that revising the definition "would narrow rather than broaden the concept of literacy" (10) and therefore ended where they began by unanimously adopting the YALS assessment definition as a guide for the NALS. The drafters of the National Literacy Act of 1991, while borrowing language from the YALS definition, elaborated upon that definition as follows:

> For the purposes of this Act the term 'literacy' means an individual's ability to read, write, and speak in English, and compute and solve problems at levels of proficiency necessary to function on the job and in society, to achieve one's goals, and develop one's knowledge and potential
> (National Literacy Act of 1991, Section 3).

It is a matter of perspective whether the specification of English, numeracy, and job-related proficiencies in the National Literacy Act wording narrows or broadens the definition of literacy. The wording of the National Education Goal for adult literacy is even more general than the NALS and National Literacy Act definitions, and the form of literacy proficiency linked to "the rights and responsibilities of citizenship" in the adult literacy goal is not clearly specified in either the NALS or the National Literacy Act definitions. Differences in emphasis aside, the basic problem with all three of these

definitions in terms of providing guidance to the public in understanding what was actually measured by the NALS is their high level of generality. It is only when one turns to the detailed performance level descriptors for the NALS scales that one can begin to appreciate the complexity of the literacy construct guiding the NALS measures of literacy proficiency.

In this respect, the problems in reporting results of the NALS and the NAAL are analogous to those encountered by the NAGB in reporting the NAEP results. Hambleton and Slater (1997) investigated the extent to which NAEP Executive Summary Reports were understandable to policymakers and educators. They found that misunderstandings and mistakes were common in reading the NAEP report and attributed these to limited prior exposure to the NAEP, unfamiliarity with the NAEP reporting scale, and limited knowledge of statistics. As potential remedies, they recommended field testing NAEP data displays, simplifying NAEP reports for policymakers and educators, and tailoring NAEP reports to particular audiences.

Tailoring reports of the NAAL to specific audiences may well be advisable. However, simply providing adult educators with more detailed understandings of the literacy constructs employed in the NAAL measures may not be enough. Simpler and more generic definitions of literacy have the distinct advantage of enabling broad-based consensus. The disadvantage of simple, generic definitions of literacy is that they allow too much leeway for erroneous interpretations. As noted above, when more detailed definitions of literacy are put forward, consensus tends to evaporate (see Venezky, Wagner, and Ciliberti 1990). Lack of consensus on specific features of desirable literacy knowledge and skills at the level of learning goals and expectations is the principal obstacle to standards-based reform of the adult literacy educational system. The 2002 NAAL presents a rare opportunity to formulate and disseminate a sophisticated model of adult literacy proficiency. Taking full advantage of this opportunity will require coordination with other models of adult literacy emerging from the adult literacy standards and accountability initiatives described in the policy/programmatic perspectives section above.

Summary and recommendations

Defining and reporting performance standards for the NAAL will be a complex and challenging enterprise. In concluding an essay on the prospects for using performance-based assessment for accountability purposes, Leigh Burstein[1] (1994, 9) quoted the following passage from the *Underachieving Curriculum* (McKnight et al. 1987):

> Complex enterprises generate complex problems requiring equally complex solutions. Schooling is such an enterprise. Therefore solutions to problems must, inevitably, be complex . . . The longing for simplicity in the face of essential complexity is likely to produce deceptive explanations that lead to ineffective solutions (51).

Burstein followed this quotation by noting that the words "assessment" or "accountability" could be substituted for "schooling" in the passage without altering the central message. Setting performance standards for adult literacy is also a complex problem that will require equally complex solutions.

All audiences for the NAAL will be longing for simplicity. But the complexities of adult literacy proficiency must be conveyed. Although, the public and policymakers will almost certainly be looking to the results of NAAL to answer the question of how many American adults are "literate enough," the designers, reporters, and interpreters of the NAAL should resist the temptation to use the NAAL results to directly address this question. Many forces will tend to push in this direction. The public will expect the NAAL to show them where the dividing line is between functional illiteracy and functional literacy and what proportion of American adults fall on either side of that line. Business people will want to know what percentage of the labor force is prepared to meet the literacy demands of the workplace and what percentage is not. Government officials will want to know what impact public funding for education has had on adult literacy proficiency and how great the need is for further funding. Practitioners in the field of adult literacy education will be looking to NAAL as a source of guidance for program planning. A substantial public education effort will be needed to enable these stakeholders to make appropriate use of the NAAL results.

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[1] This paper is headed by the following note from Ron Dietel, CRESST Director of Communications: "Leigh Burstein passed away on July 7, 1994. In honor of his memory, we are publishing this report with virtually no editorial changes. We ask anyone who references or quotes from this paper to note that Leigh did not review the final publication. It is possible that Leigh would have made significant changes or none at all."

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Defining "appropriate" interpretations and uses of NAAL results will entail a combination of political (policy) and technical (measurement) decisions. Decisions in the measurement arena (i.e., task content and choice of methods to use in defining cut scores to place tasks and individuals within specified levels of the literacy performance continua) will shape the context for decision making in the policy arena (i.e., public and policymaker's perceptions of the need for and value of adult basic education). This paper has examined the intersection of these two decision making processes. It has looked back at the experience of the NALS and forward to the lessons of that experience—in light of new technical approaches to performance standard setting and a changed climate of adult literacy standards policy and accountability systems—for performance standard setting and reporting for the next National Assessment of Adult Literacy.

The key challenges facing the 2002 NAAL in defining and reporting performance standards have arisen from the following conditions:

- The NALS "profile" approach to large-scale literacy assessment was not intended to set a performance standard for adult literacy (in the sense of answering the question of "how much literacy is enough"). Nonetheless, the NEGP's decision to adopt Level 3 on the NALS prose scale as an indicator of progress toward the National Education Goal for adult literacy created a *de facto* NALS-based national performance standard for adult literacy.
- The "agenda-analytic" criteria for effective policy research that guided the design of the NALS are at odds with the assessment-driven, standards-based model of educational reform that has come to dominate American educational policy discourse.

Recent developments in measurement methodology and in educational standards policy have created new opportunities and challenges for the NAAL.

- Psychometricians have developed methods for including stakeholders in the definition of performance standards for large-scale assessment.
- Policy initiatives have moved the field of adult literacy education toward a standards-based model of system reform and accountability.

Because performance standards mean different things in different contexts, the discussion of the above challenges was framed by a continuum of conceptualizations of adult literacy performance standards.

- At one end of the continuum are "technical" conceptions of performance standards as used in the psychometric literature in discussions of methods for setting cut scores for levels of proficiency in large-scale assessments.
- At the opposite end of the continuum are "popular" conceptions of adult literacy performance standards as expressed in everyday discourse and in the news media.

In between these two extremes are "policy/programmatic" conceptions of adult literacy performance standards defined in educational goals (NEGP, SCANS, NSSB, NIFL's Equipped for the Future), accountability systems (NRS, WIA state plans), as well as in adult literacy program curricula and learning goals.

There are numerous gaps separating technical, policy/programmatic, and popular conceptions of adult literacy performance standards, but some of these gaps can and should be bridged. The NAAL presents opportunities for bridging gaps in the following ways:

Recommendations for technical performance standards:

- Adopt methods for including a broad-range of stakeholders in the process of defining technical performance standards (task specifications and cut scores) for the NAAL.

Recommendations for policy/programmatic performance standards:

- Emphasize applications of NAAL results to profile populations in need of literacy education services.
- Avoid misapplications of the NAAL results for adult education program accountability.
- Contrast literacy constructs and skills measured by the NAAL and those measured by standardized tests (CASAS, TABE, etc.) used in accountability systems in order to avoid linking or equivalencies of the NAAL scales and levels to program outcome measures.

- Make connections between NAAL literacy definitions and performance levels and adult literacy program curricular content and content standards (such as EFF) so that the literacy constructs informing the NAAL scales and levels become more transparent and can serve as guides for program planning and goal-setting.

Recommendations for popular performance standards:

- Conduct public education campaigns to provide concrete and clear explanations of the NAAL scales and level descriptors and to avoid popular misinterpretations of NAAL performance Levels 1-2 as "functional illiteracy."

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Listing of NCES Working Papers to Date

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Listing of NCES Working Papers by Program Area

No.	Title	NCES contact
Baccalaureate and Beyond (B&B)		
98-15	Development of a Prototype System for Accessing Linked NCES Data	Steven Kaufman
Beginning Postsecondary Students (BPS) Longitudinal Study		
98-11	Beginning Postsecondary Students Longitudinal Study First Follow-up (BPS:96-98) Field Test Report	Aurora D'Amico
98-15	Development of a Prototype System for Accessing Linked NCES Data	Steven Kaufman
1999-15	Projected Postsecondary Outcomes of 1992 High School Graduates	Aurora D'Amico
Common Core of Data (CCD)		
95-12	Rural Education Data User's Guide	Samuel Peng
96-19	Assessment and Analysis of School-Level Expenditures	William J. Fowler, Jr.
97-15	Customer Service Survey: Common Core of Data Coordinators	Lee Hoffman
97-43	Measuring Inflation in Public School Costs	William J. Fowler, Jr.
98-15	Development of a Prototype System for Accessing Linked NCES Data	Steven Kaufman
1999-03	Evaluation of the 1996-97 Nonfiscal Common Core of Data Surveys Data Collection, Processing, and Editing Cycle	Beth Young
Decennial Census School District Project		
95-12	Rural Education Data User's Guide	Samuel Peng
96-04	Census Mapping Project/School District Data Book	Tai Phan
98-07	Decennial Census School District Project Planning Report	Tai Phan
Early Childhood Longitudinal Study (ECLS)		
96-08	How Accurate are Teacher Judgments of Students' Academic Performance?	Jerry West
96-18	Assessment of Social Competence, Adaptive Behaviors, and Approaches to Learning with Young Children	Jerry West
97-24	Formulating a Design for the ECLS: A Review of Longitudinal Studies	Jerry West
97-36	Measuring the Quality of Program Environments in Head Start and Other Early Childhood Programs: A Review and Recommendations for Future Research	Jerry West
1999-01	A Birth Cohort Study: Conceptual and Design Considerations and Rationale	Jerry West
2000-04	Selected Papers on Education Surveys: Papers Presented at the 1998 and 1999 ASA and 1999 AAPOR Meetings	Dan Kasprzyk
Education Finance Statistics Center (EDFIN)		
94-05	Cost-of-Education Differentials Across the States	William J. Fowler, Jr.
96-19	Assessment and Analysis of School-Level Expenditures	William J. Fowler, Jr.
97-43	Measuring Inflation in Public School Costs	William J. Fowler, Jr.
98-04	Geographic Variations in Public Schools' Costs	William J. Fowler, Jr.
1999-16	Measuring Resources in Education: From Accounting to the Resource Cost Model Approach	William J. Fowler, Jr.
High School and Beyond (HS&B)		
95-12	Rural Education Data User's Guide	Samuel Peng
1999-05	Procedures Guide for Transcript Studies	Dawn Nelson
1999-06	1998 Revision of the Secondary School Taxonomy	Dawn Nelson
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1999-05	Procedures Guide for Transcript Studies	Dawn Nelson
1999-06	1998 Revision of the Secondary School Taxonomy	Dawn Nelson

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No.	Title	NCES contact
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Integrated Postsecondary Education Data System (IPEDS)		
97-27	Pilot Test of IPEDS Finance Survey	Peter Stowe
98-15	Development of a Prototype System for Accessing Linked NCES Data	Steven Kaufman
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98-17	Developing the National Assessment of Adult Literacy: Recommendations from Stakeholders	Sheida White
1999-09a	1992 National Adult Literacy Survey: An Overview	Alex Sedlacek
1999-09b	1992 National Adult Literacy Survey: Sample Design	Alex Sedlacek
1999-09c	1992 National Adult Literacy Survey: Weighting and Population Estimates	Alex Sedlacek
1999-09d	1992 National Adult Literacy Survey: Development of the Survey Instruments	Alex Sedlacek
1999-09e	1992 National Adult Literacy Survey: Scaling and Proficiency Estimates	Alex Sedlacek
1999-09f	1992 National Adult Literacy Survey: Interpreting the Adult Literacy Scales and Literacy Levels	Alex Sedlacek
1999-09g	1992 National Adult Literacy Survey: Literacy Levels and the Response Probability Convention	Alex Sedlacek
2000-05	Secondary Statistical Modeling With the National Assessment of Adult Literacy: Implications for the Design of the Background Questionnaire	Sheida White
2000-06	Using Telephone and Mail Surveys as a Supplement or Alternative to Door-to-Door Surveys in the Assessment of Adult Literacy	Sheida White
2000-07	"How Much Literacy is Enough?" Issues in Defining and Reporting Performance Standards for the National Assessment of Adult Literacy	Sheida White
National Assessment of Educational Progress (NAEP)		
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97-29	Can State Assessment Data be Used to Reduce State NAEP Sample Sizes?	Steven Gorman
97-30	ACT's NAEP Redesign Project: Assessment Design is the Key to Useful and Stable Assessment Results	Steven Gorman
97-31	NAEP Reconfigured: An Integrated Redesign of the National Assessment of Educational Progress	Steven Gorman
97-32	Innovative Solutions to Intractable Large Scale Assessment (Problem 2: Background Questionnaires)	Steven Gorman
97-37	Optimal Rating Procedures and Methodology for NAEP Open-ended Items	Steven Gorman
97-44	Development of a SASS 1993-94 School-Level Student Achievement Subfile: Using State Assessments and State NAEP, Feasibility Study	Michael Ross
98-15	Development of a Prototype System for Accessing Linked NCES Data	Steven Kaufman
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1999-06	1998 Revision of the Secondary School Taxonomy	Dawn Nelson
National Education Longitudinal Study of 1988 (NELS:88)		
95-04	National Education Longitudinal Study of 1988: Second Follow-up Questionnaire Content Areas and Research Issues	Jeffrey Owings
95-05	National Education Longitudinal Study of 1988: Conducting Trend Analyses of NLS-72, HS&B, and NELS:88 Seniors	Jeffrey Owings
95-06	National Education Longitudinal Study of 1988: Conducting Cross-Cohort Comparisons Using HS&B, NAEP, and NELS:88 Academic Transcript Data	Jeffrey Owings
95-07	National Education Longitudinal Study of 1988: Conducting Trend Analyses HS&B and NELS:88 Sophomore Cohort Dropouts	Jeffrey Owings
95-12	Rural Education Data User's Guide	Samuel Peng
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96-03	National Education Longitudinal Study of 1988 (NELS:88) Research Framework and Issues	Jeffrey Owings
98-06	National Education Longitudinal Study of 1988 (NELS:88) Base Year through Second Follow-Up: Final Methodology Report	Ralph Lee

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96-22	1995 National Household Education Survey (NHES:95) Questionnaires: Screener, Early Childhood Program Participation, and Adult Education	Kathryn Chandler
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96-30	Comparison of Estimates from the 1995 National Household Education Survey (NHES:95)	Kathryn Chandler
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97-04	Design, Data Collection, Monitoring, Interview Administration Time, and Data Editing in the 1993 National Household Education Survey (NHES:93)	Kathryn Chandler
97-05	Unit and Item Response, Weighting, and Imputation Procedures in the 1993 National Household Education Survey (NHES:93)	Kathryn Chandler
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97-34	Comparison of Estimates from the 1993 National Household Education Survey	Kathryn Chandler
97-35	Design, Data Collection, Interview Administration Time, and Data Editing in the 1996 National Household Education Survey	Kathryn Chandler
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96-06	The Schools and Staffing Survey (SASS) for 1998-99: Design Recommendations to Inform Broad Education Policy	Dan Kasprzyk

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1999-04	Measuring Teacher Qualifications	Dan Kasprzyk
1999-07	Collection of Resource and Expenditure Data on the Schools and Staffing Survey	Stephen Broughman
1999-08	Measuring Classroom Instructional Processes: Using Survey and Case Study Fieldtest Results to Improve Item Construction	Dan Kasprzyk
1999-10	What Users Say About Schools and Staffing Survey Publications	Dan Kasprzyk
1999-12	1993-94 Schools and Staffing Survey: Data File User's Manual, Volume III: Public-Use Codebook	Kerry Gruber
1999-13	1993-94 Schools and Staffing Survey: Data File User's Manual, Volume IV: Bureau of Indian Affairs (BIA) Restricted-Use Codebook	Kerry Gruber
1999-14	1994-95 Teacher Followup Survey: Data File User's Manual, Restricted-Use Codebook	Kerry Gruber
1999-17	Secondary Use of the Schools and Staffing Survey Data	Susan Wiley

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2000-04	Selected Papers on Education Surveys: Papers Presented at the 1998 and 1999 ASA and 1999 AAPOR Meetings	Dan Kasprzyk

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96-22	1995 National Household Education Survey (NHES:95) Questionnaires: Screener, Early Childhood Program Participation, and Adult Education	Kathryn Chandler
98-03	Adult Education in the 1990s: A Report on the 1991 National Household Education Survey	Peter Stowe
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Adult literacy—see Literacy of adults		
American Indian – education		
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Libraries		
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